

SM1109-5

**MAXIMUM RATING:**

- Input Power Level: 10 dBm
- DC Voltage : 3 V
- Operating Temperature: -40°C to +105°C
- Storage Temperature: -40°C to +125°C
- ESD Machine Mode : 50V
- ESD Human Body Mode : 100V
- Moisture Sensitive Level (MSL): Level 1
- AEC-Q200 Qualified

**ELECTRICAL CHARACTERISTICS:**

Temperature range for specification :  $T_{spec} = -40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$

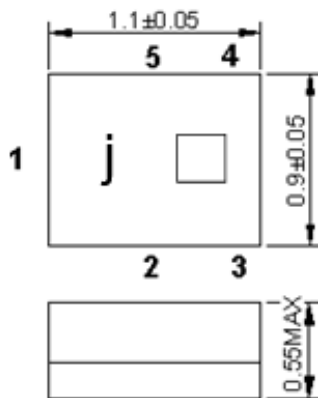
Terminating source impedance :  $Z_s = 50 \Omega$

Terminating load impedance :  $Z_L = 50 \Omega$

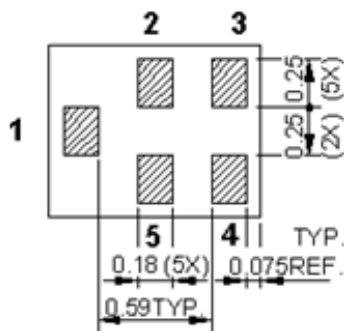
Item	Unit	Min.	Typ.	Max.
<b>Center Frequency</b> $F_c$	MHz	-	2332.5	-
<b>Min. Insertion Loss</b> (2320~2345 MHz) $\alpha$	dB	-	3.1	-
<b>Max. Insertion Loss</b> (2320~2345 MHz) $IL$	dB	-	4.6	7
<b>Amplitude Ripple</b> (2320~2324.5 MHz)	dB <sub>p-p</sub>	-	1.3	2.3
<b>Amplitude Ripple</b> (2324.5~2328.2 MHz)	dB <sub>p-p</sub>	-	0.6	1.2
<b>Amplitude Ripple</b> (2328.2~2332.5 MHz)	dB <sub>p-p</sub>	-	0.2	1.2
<b>Amplitude Ripple</b> (2332.5~2334.38 MHz)	dB <sub>p-p</sub>	-	0.4	1.2
<b>Amplitude Ripple</b> (2334.38~2336.25 MHz)	dB <sub>p-p</sub>	-	0.2	1.2
<b>Amplitude Ripple</b> (2336.25~2337.75 MHz)	dB <sub>p-p</sub>	-	0.2	1.2
<b>Amplitude Ripple</b> (2337.75~2341.25 MHz)	dB <sub>p-p</sub>	-	0.3	1.2
<b>Amplitude Ripple</b> (2341.25~2343.125 MHz)	dB <sub>p-p</sub>	-	0.2	1.2
<b>Amplitude Ripple</b> (2343.125~2345 MHz)	dB <sub>p-p</sub>	-	0.5	2.1
<b>VSWR</b> (2320~2345 MHz)		-	1.8	2.1
<b>Attenuation</b> (refer to min. insertion loss $\alpha$ )				
100 ~ 800 MHz	dB	35	65	-
800 ~ 2100 MHz	dB	31	42	-
2100 ~ 2275 MHz	dB	32	37	-

2275 ~ 2288	MHz	dB	30	32	-
2288 ~ 2300	MHz	dB	25	32	-
2300 ~ 2310	MHz	dB	15	23	-
2310 ~ 2315	MHz	dB	3.5	7.5	-
2350 ~ 2355	MHz	dB	3.5	5.5	-
2355 ~ 2365	MHz	dB	13	17	-
2365 ~ 2377	MHz	dB	39	42	-
2377 ~ 2390	MHz	dB	35	39	-
2390 ~ 3000	MHz	dB	28	30	-
Temperature Coefficient		ppm/°C	-	-6.5	-

**OUTLINE DRAWING:**



All tolerances are +/-0.05 mm unless otherwise specified  
 Coplanarity : 0.1 mm max.  
 1 to 5 : Pin No.  
 Unit : mm

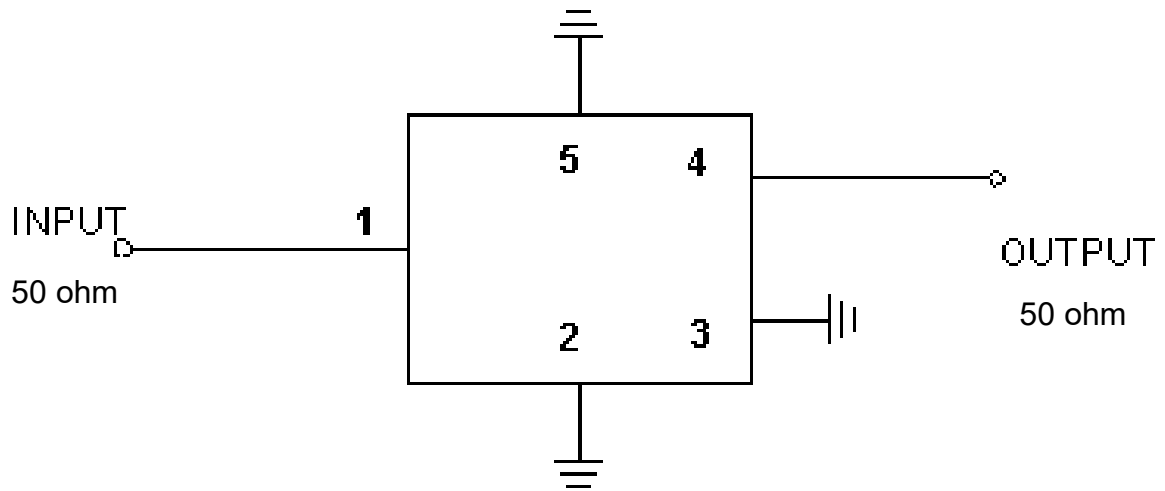


1 : Input  
 4 : Output  
 2, 3, 5 : Ground

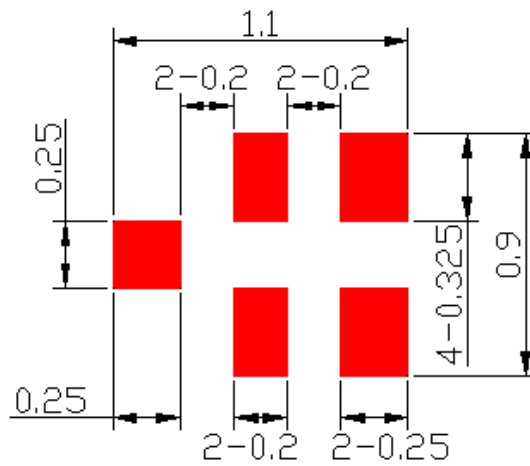
□ : Year/Month Code (Follow the table)

YEAR/Month	1	2	3	4	5	6	7	8	9	10	11	12
2021	A	B	C	D	E	F	G	H	J	K	L	M
2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2023	a	b	c	d	e	f	g	h	j	k	l	m
2024	n	p	q	r	s	t	u	v	w	x	y	z
2025	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2026	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2027	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>	<u>h</u>	<u>j</u>	<u>k</u>	<u>l</u>	<u>m</u>
2028	<u>n</u>	<u>p</u>	<u>q</u>	<u>r</u>	<u>s</u>	<u>t</u>	<u>u</u>	<u>v</u>	<u>w</u>	<u>x</u>	<u>y</u>	<u>z</u>

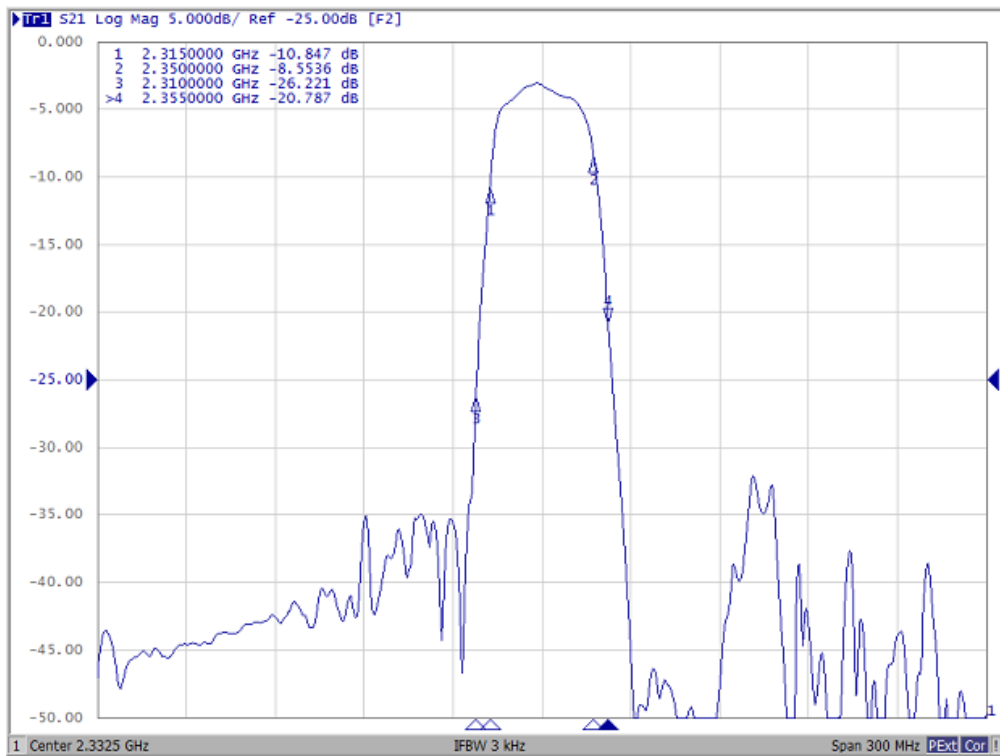
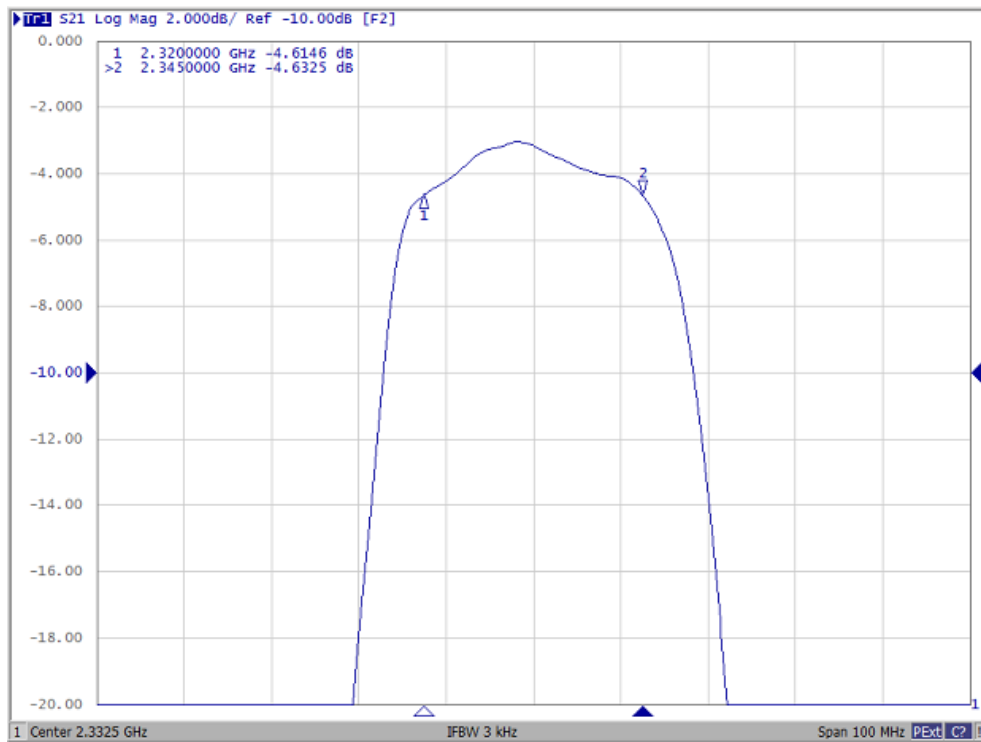
**MEASUREMENT CIRCUIT:**

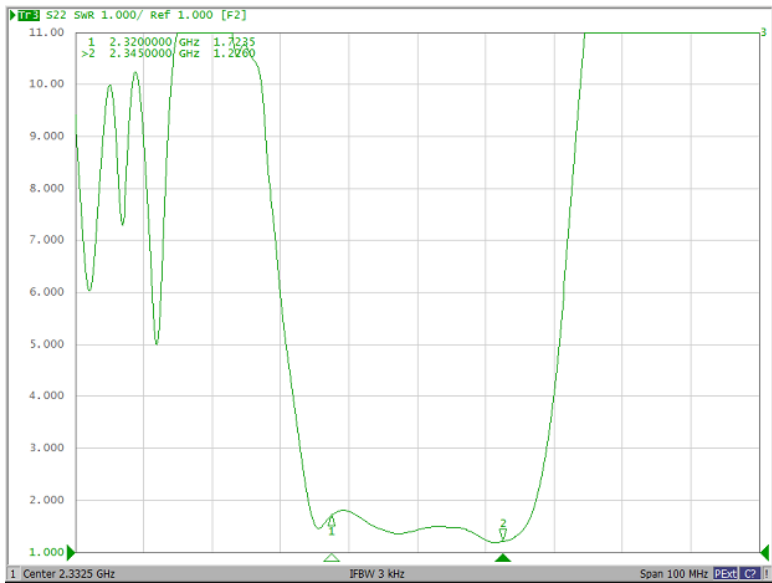
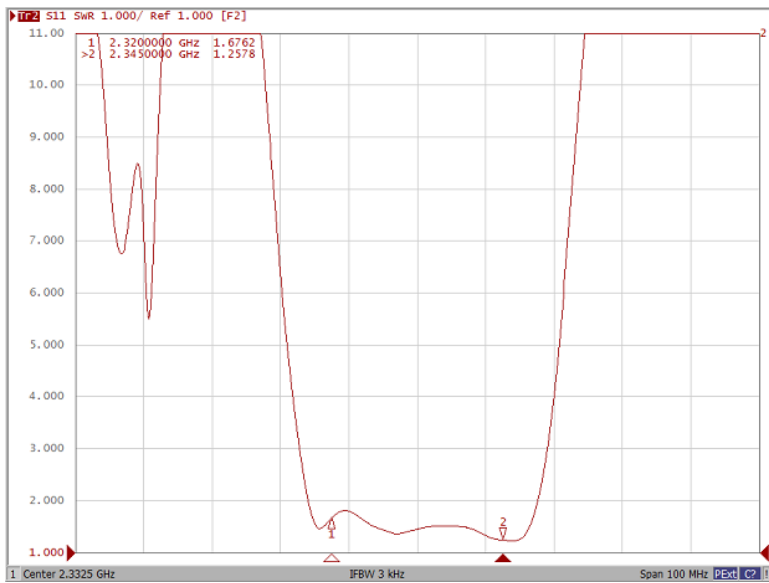
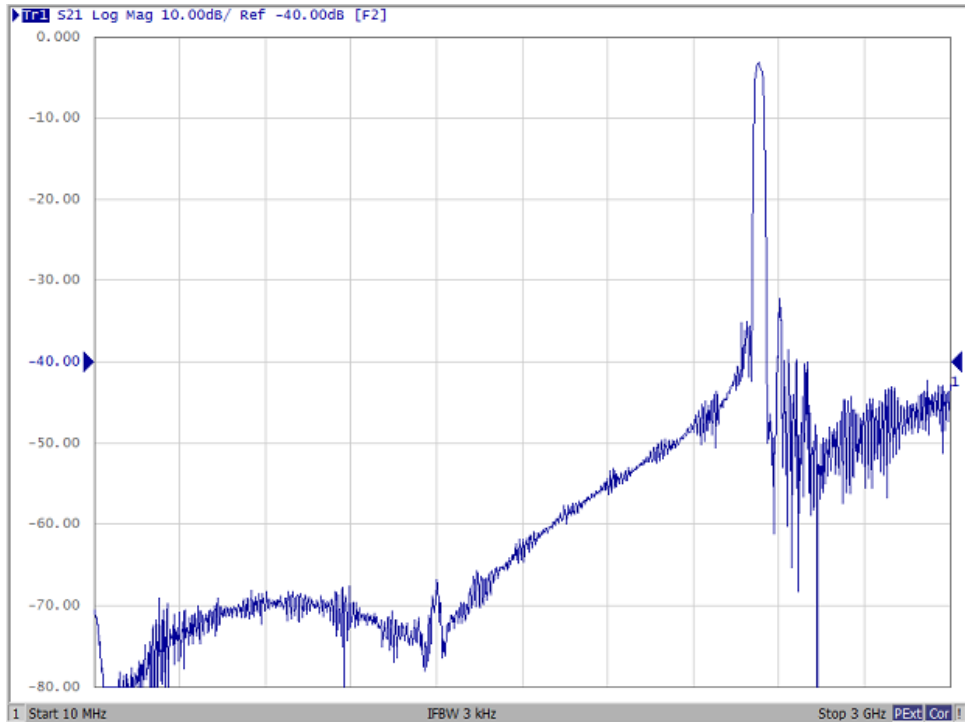


**PCB Footprint :**



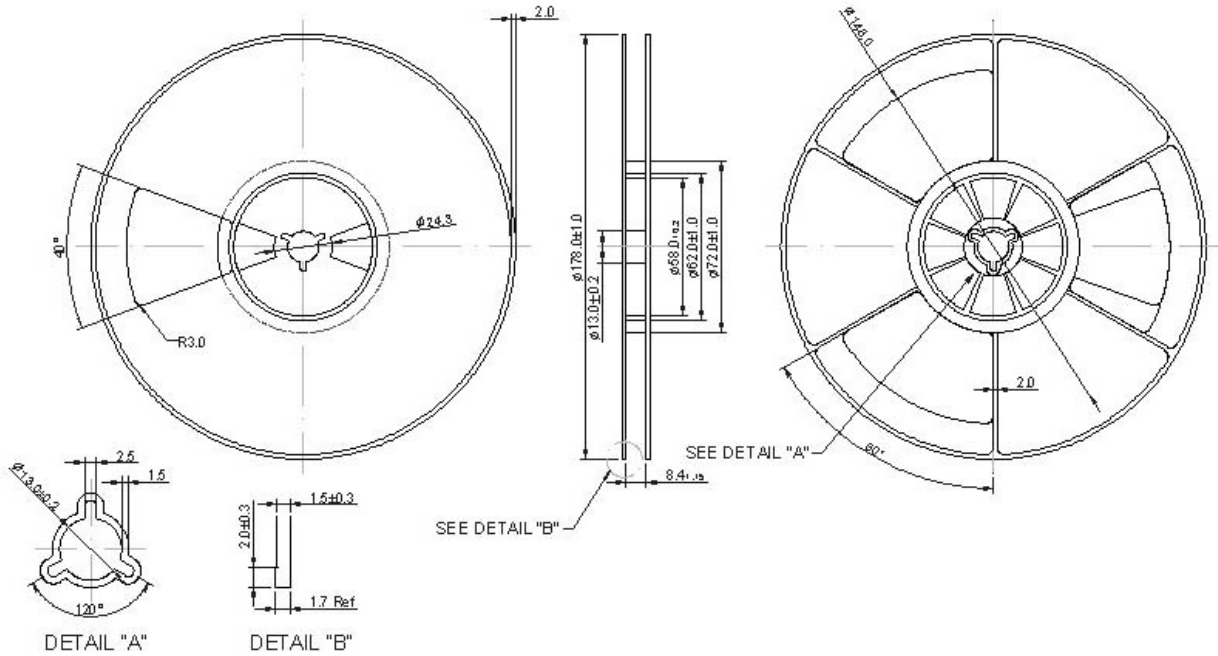
## Frequency Characteristics:



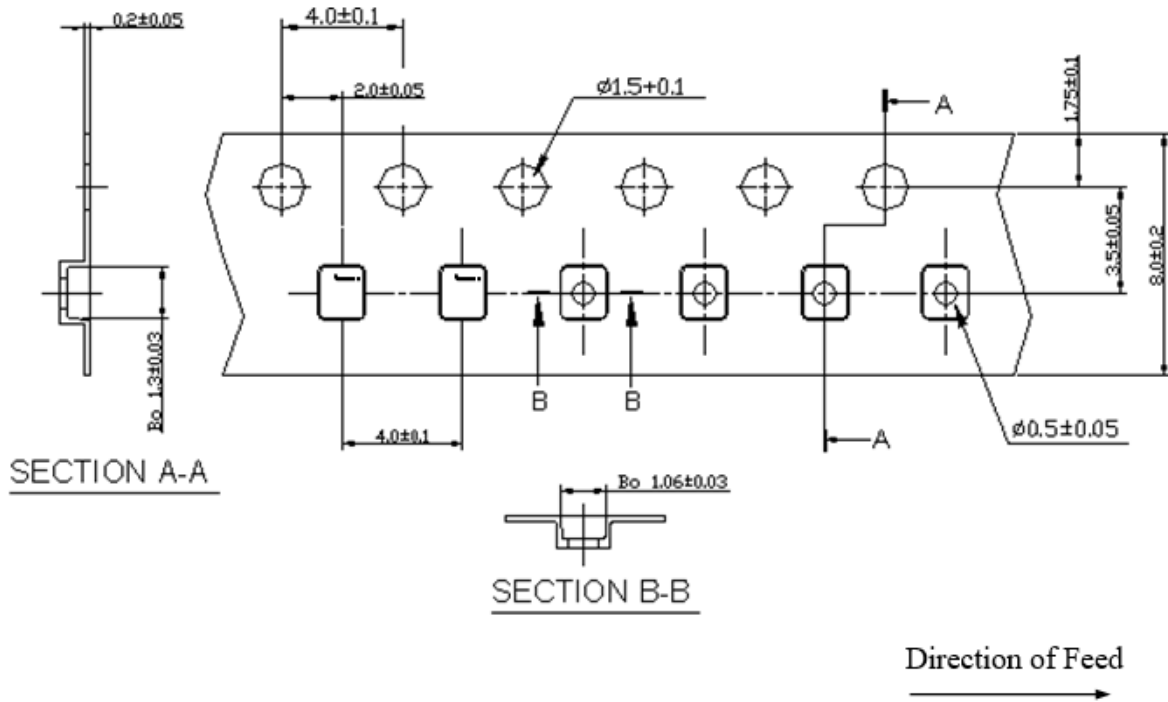


**PACKING:**  
1. REEL DIMENSION

Reel Count:  
7" = 3000  
13" = 10,000

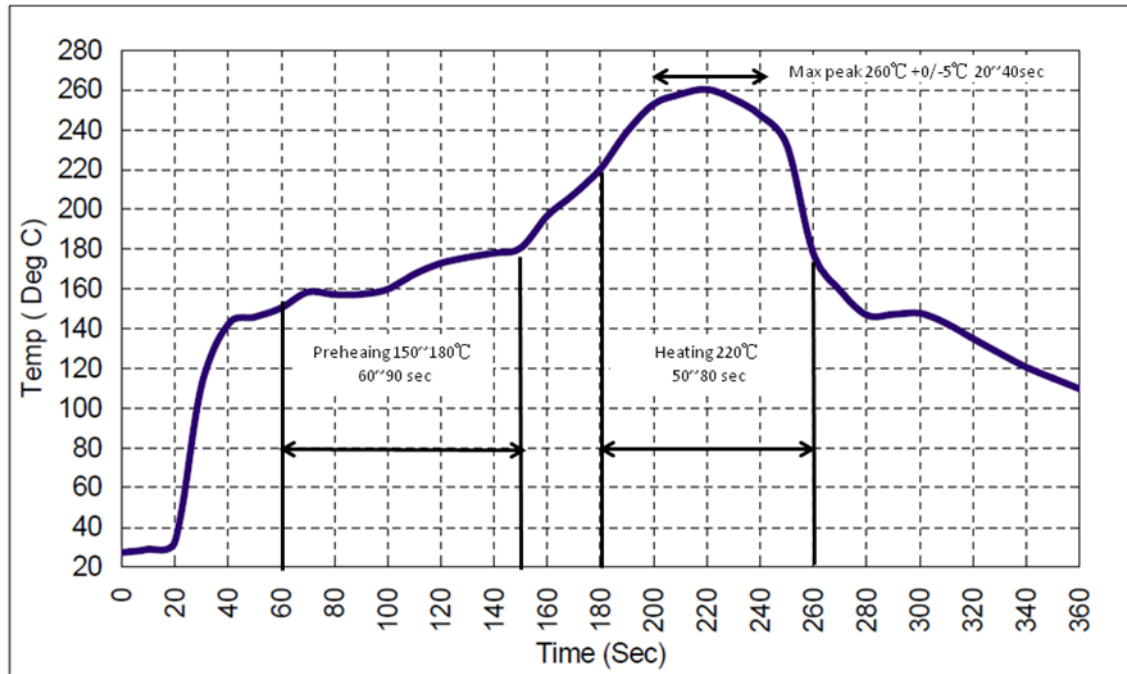


2. TAPE DIMENSION



### RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 245~260°C peak (min. 10sec).
4. Time : 2 times.



**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.